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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,002	05/10/2001	Soo-Han Park	1349.1024	4122

21171 7590 05/18/2005

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EXAMINER

CHU, KIM KWOK

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/852,002	Applicant(s) PARK, SOO-HAN	
	Examiner Kim-Kwok CHU	Art Unit 2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 2/1/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,13,14,17-19,28,29 and 32 is/are rejected.
- 7) ☒ Claim(s) 5-12,15,16,20-27,30 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/10/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/5/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Remarks

1. Applicant's Remarks filed on February 1, 2005 have been fully considered but they are not persuasive.

(a) With respect to the Remarks on claims 1 and 2, Applicant states that the prior art of Kajiyama does not teach the claimed diffraction grating splitting the first and second laser beams into a main ray and sub rays "according to movement of the diffraction grating between a first position and a second position along an optical axis" (page 12 of the Remarks, lines 2 and 3). Accordingly, when light beams of 635 nm and 780 nm light beams pass through the diffraction grating 5, a main ray from 635 nm light beam and sub rays from 780 nm light beam are obtained (Figs. 7-9). Furthermore, the diffraction grating 5 is held/attached to an objective lens by the actuator 6 and capable of being moved upward and downward along an optical axis. When the objective lens is activated, the attached grating 5 is moved along the optical axis and produces main rays and sub rays to the objective lens.

(b) With respect to the Remarks on claims 3, 4, 13, 14, 18, 19, 28 and 29, Applicant states that the prior art of Abe does not teach "a diffraction grating selectively splitting the first and second laser beams into three rays depending on which optical disk is to be accessed" (page 13 of the Remarks, lines 3 and 4). Accordingly, the cited prior art of Abe's

diffraction grating 25 splits the first and second laser beams into three rays depending on which optical disk is to be accessed. (Fig. 17; wavelength 650 nm is for DVD, wavelength 780 nm is for CD).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.*

3. Claims 3, 4, 13, 14, 18, 19, 28 and 29 are rejected under 35 U.S.C. § 102(e) as being anticipated by Abe et al. (U.S. Patent 6,084,843).

Abe teaches a disk player having all the elements and means as cited in claims 3 and 4. For example, Abe teaches the following:

(a) as in claim 3, a first laser diode 21A emitting a first laser beam to a first optical disk 41A (Fig. 10);

(b) as in claim 3, a second laser diode 21B emitting a second laser beam to a second optical disc 41B (Fig. 10);

(c) as in claim 3, a diffraction grating 112A selectively splitting the first and the second laser beams into three rays depending on which optical disk is to be accessed, wherein the three rays comprise a main ray and two sub-rays (Figs. 3, 6 and 7; diffractive grating 112A splits a light beam into zero order and plus, minus 1st order rays);

(d) as in claim 3, a photo-detector 28 actively receiving the three rays of the first laser beam and the three rays of the second laser beam at different detecting portions for data recording and/or reproduction and error detection and compensation (Fig. 11; column 4, lines 50-58);

(e) as in claim 3, the detecting portions comprise a central detecting portion and two peripheral detecting portions (Fig. 11);

(f) as in claim 4, the photodetector 28 receives the main ray of the first laser beam on the central detecting portion to determine a focus error (Fig. 11; column 14, lines 60-65);

(g) as in claim 4, the main ray of the first laser beam is used to record and/or reproduce the data on/from the first optical disk (Fig. 11); and

(h) as in claim 4, the photodetector receives the sub-rays of the first laser beam on the peripheral detecting portions to determine a tracking error (Fig. 11; column 14, lines 55-60).

4. Claims 13 and 14 have limitations similar to those treated in the above rejection, and are met by the references as discussed above. Claims 13 and 14 however also recite the following limitations which are taught by the prior art of Abe. For example, Abe teaches the following:

(a) as in claim 13, the photo-detector is a six-split photo-detector comprising four cells on a central detecting portion and two cells on peripheral detecting portions (Fig. 10);

(b) as in claim 14, the main ray of the first laser beam arranged on an optical axis is detected from the central detecting portion 28A to record and/or reproduce the data on/from the first optical disk (Fig. 11); and

(c) as in claim 14, the main ray of the second laser beam strayed from the optical axis is detected from one of the peripheral detecting portions 28B to record and/or reproduce the data on/from the second optical disk (Fig. 11).

5. Method claims 18 and 19 are drawn to the method of using the corresponding apparatus claimed in claims 3 and 4. Therefore method claims 18 and 19 correspond to apparatus claims 3 and 4 and are rejected for the same reasons of anticipation as used above.

6. Method claim 28 is drawn to the method of using the corresponding apparatus claimed in claim 3. Therefore method claim 18 corresponds to apparatus claim 3 and is rejected for the same reasons of anticipation as used above.

7. Claim 29 has limitations similar to those treated in the above rejection, and is met by the references as discussed above. Claim 29 however also recites the following limitations which are taught by the prior art of Abe. For example, Abe teaches the following:

(a) as in claim 29, the main ray of the first laser beam arranged on an optical axis is detected from the central detecting portion 28A to record and/or reproduce the data on/from the first optical disk (Fig. 11); and

(b) as in claim 29, the main ray of the second laser beam strayed from the optical axis is detected from one of the peripheral detecting portions 28B to record and/or reproduce the data on/from the second optical disk (Fig. 29).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiyama et al. (U.S. Patent 6,552,990) in view of Abe et al. (U.S. Patent 6,084,843).

Kajiyama teaches an apparatus for recording and/or reproducing data on and/or from various types of optical disks very similar to that of the present invention. For example, Kajiyama teaches the following:

(a) as in claim 1, a first laser diode 1a emits a first laser beam (Fig. 2; laser diode 1a is for DVD and laser diode 1b is for CD; column 8, lines 18-23);

(b) as in claim 1, a second laser diode 1b emits a second laser beam (Fig. 2; laser diode 1a is for DVD and laser diode 1b is for CD; column 8, lines 18-23);

(c) as in claim 1, a diffraction grating 5 selectively splitting the first and the second laser beams into a main ray and two sub-rays (Fig. 20);

(d) as in claim 1, the diffraction grating 5 is movable between a first position and a second position along an optical axis (Fig. 2; column 7, lines 55 and 56);

(e) as in claim 1, a photo-detector 8 for receiving the main ray based on the first position of the diffraction grating (Fig. 2);

(f) as in claim 1, a photo-detector 8 for receiving the main ray based on the second position of the diffraction grating (Fig. 2);

(g) as in claim 1, the first and second laser diode 1a, 1b are formed in one package 1 (Fig. 2); and

(h) as in claim 2, the photodetector 1 is a single unit on which both the first and second detecting portions 1a, 1b are formed (Fig. 2).

However, Kajiyama does not teach the following:

(a) as in claim 1, the photo-detector 8 having at least a first detecting portion and a second detection portion;

(b) as in claim 1, the first detection portion at a first location receiving the main ray of the first laser beam; and

(c) as in claim 1, the second detection portion is at a different location receiving the main ray of the second laser beam.

Abe teaches an optical pickup having the following features:

(a) a photodetector having at least a first detecting portion 28B and a second detection portion 28A (Figs. 11 and 26; column 9, lines 1-39);

(b) the first detection portion 28B at a first location receives the main ray of the first laser beam (Figs. 11, 26; 28B is the DVD signal detecting); and

(c) the second detection portion 28A at a different location receives the main ray of the second laser beam (Figs. 11, 26; 28A is the CD signal detecting portion).

To detect the reflected light beams of two laser sources of different wavelengths arranged side by side suitable for a CD and DVD disk drive, a photodetector should have two detecting portions placed into a conjugate position where each detecting portion receives its corresponding reflected light beam. Hence, to receive Kajiyama's light beams reflected from two different disks such as CD and DVD on two different locations on Kajiyama's photodetector 8, it would have been obvious to one of ordinary skill in the art to replace the photodetector 8 with Abe's photodetector 28A, 28B, because the

first detecting portion 28B has a photodetecting element layout designed as differential phase detection system for detecting light beams reflected from a DVD and the second detecting portion 28A has a photodetecting element layout designed as a three beam detection system for detecting light beams reflected from a CD.

Allowable Subject Matter

10. Claims 17 and 32 are allowable.

11. Claims 5-12, 15, 16, 20-27, 30 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claims 5, 17, 20 and 32, the prior art of record fails to teach or fairly suggest the following features:

(a) the photodetector receives the main ray of the second laser beam on one of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk; and

(b) the photodetector receives one of the two sub-rays (of the second laser beam) on the central detecting portion to determine a focus error and a tracking error on the second optical disk.

As in claims 12 and 27, the prior art of record fails to teach or fairly suggest the following features:

(a) an error occurring due to initial positions of the first laser diode and the second laser diode is compensated for by selectively moving the diffraction grating between a first position and a second position, the first position being such that the main ray of the first laser beam is incident on the central detecting portion, while the two sub-rays are incident on the peripheral detecting portion, and the second position being such that the main ray of the second laser beam is incident on one of the peripheral detecting portions, while one of the two sub-rays is incident on the central detecting portion.

As in claims 15 and 30, the prior art of record fail to teach or fairly suggest the following features:

(a) receiving the main ray of the first laser beam on four cells of the central detecting portion to determine a focus error and to record and/or reproduce the data on/from the first optical disk;

(b) receiving the sub-rays of the first laser beam on two cells of the peripheral detecting portions, respectively, to determine a tracking error;

(c) receiving the main ray of the second laser beam on one of the two cells of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk; and

(d) receiving one of the two sub-rays of the second laser beam on the four cells of the central detecting portion to determine a focus error and a tracking error on the second optical disk.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sugiura et al. (6,130,872) is pertinent because Sugiura teaches an information recording/reproducing system having two detecting elements and two light sources.

Mori et al. (5,717,674) is pertinent because Sugiura teaches an information recording/reproducing system having two detecting elements and two light sources.

14. Any response to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Or faxed to:

(703) 872-9306 (for formal communications intended for entry. Or:

(571) 273-7585, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Any inquiry of a general nature or relating to the status of this application should be directed USPTO Contact Center (703) 308-4357; Electronic Business Center (703) 305-3028.

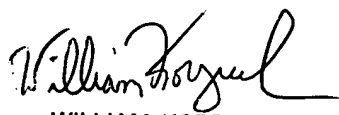
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

Kim-Kwok CHU

62 5/13/05

Examiner AU2653
May 13, 2005

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